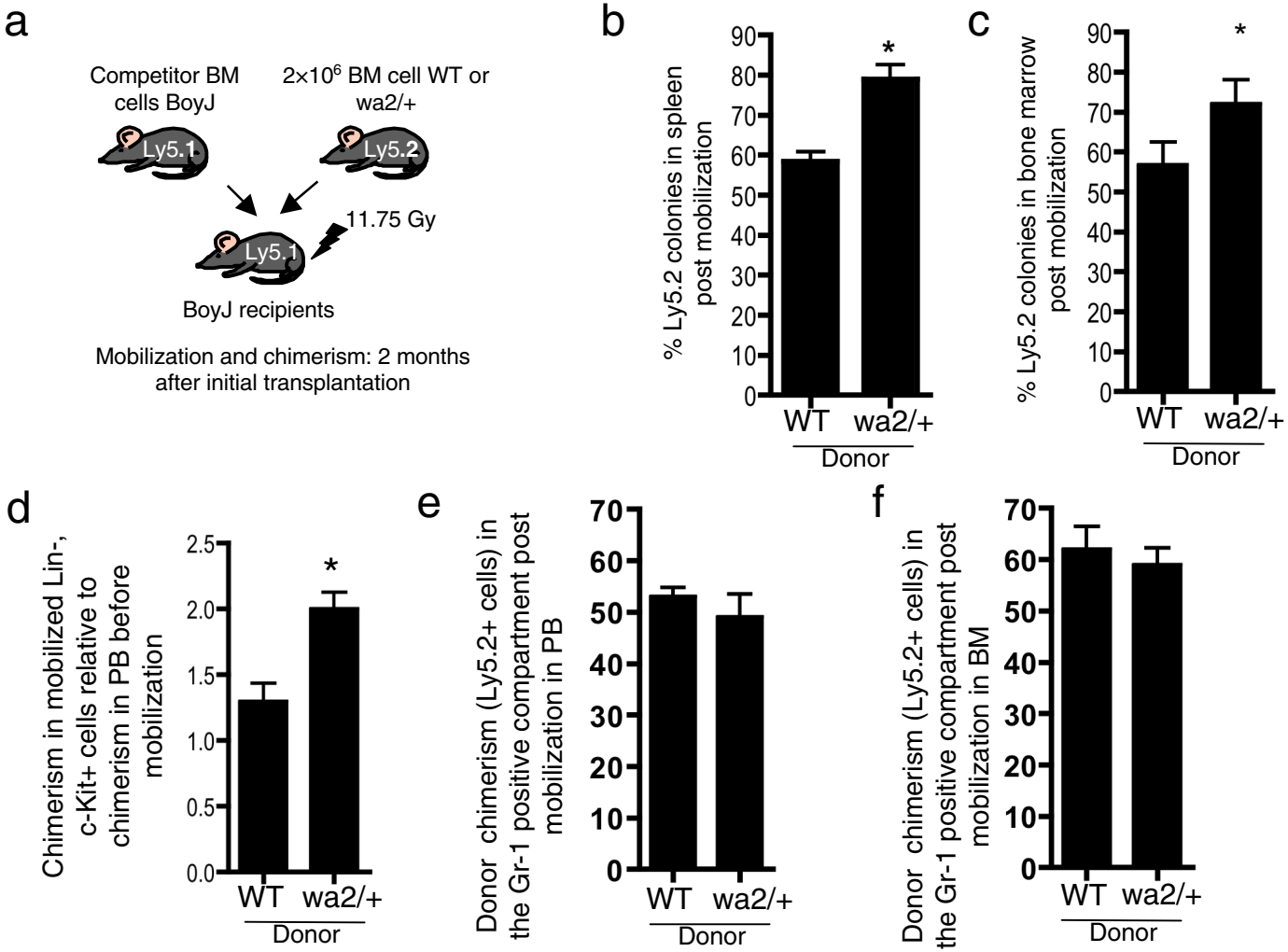
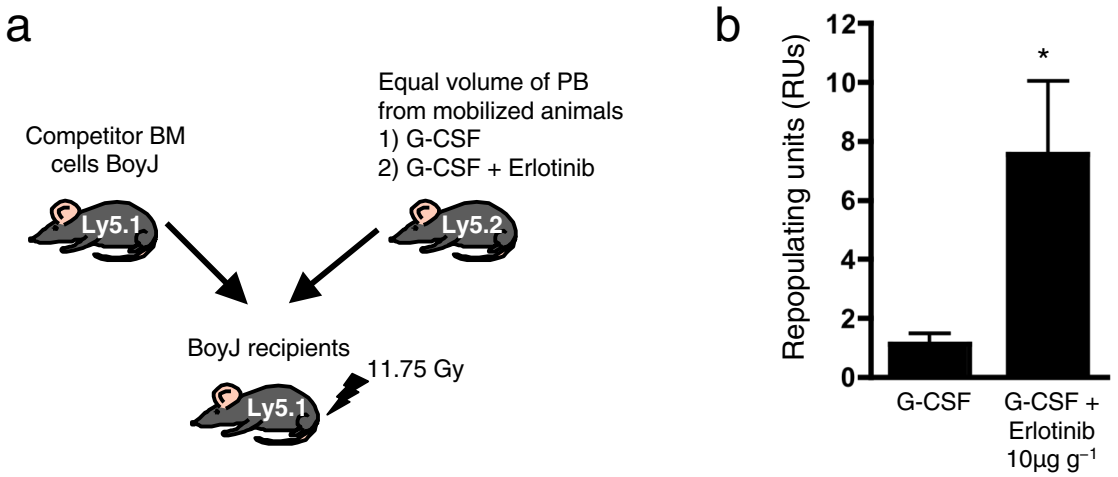
Supplemental Figure 1



Supplemental Figure 1**. Increased G-CSF induced mobilization is intrinsic to wa2/+ progenitor cells**. (a) Schematic of the experimental setup for competitive transplant experiments to determine whether increased mobilization is intrinsic to wa2/+ progenitor cells. (b) Percent of Ly5.2 positive (donor) CFCs post mobilization in spleen. (c) Percent of Ly5.2 positive (donor) CFCs post mobilization in BM. (d) Relative increase in donor chimerism in Lin-c-Kit+ progenitors mobilized to peripheral blood relative to total donor chimerism in peripheral blood prior to mobilization. (e) Donor Ly5.2 + chimerism in the Gr1+ neutrophil compartment in peripheral blood upon G-CSF induced competitive mobilization. (f) Donor Ly5.2 + chimerism in the Gr1+ neutrophil compartment in bone marrow upon G-CSF induced competitive mobilization. n = at least 5 recipients per experimental group, data is presented as mean + 1 SEM. *=p<0.05.

Supplemental Figure 2



Supplemental Figure 2. **Erlotinib enhances G-CSF induced mobilization of HSCs.** (a) Schematic of the set-up for competitive transplant experiments to measure repopulating units in peripheral blood after mobilization by G-CSF or G-CSF and Erlotinib (3 recipients/group). (b) Repopulating units based on donor chimerism as determined by flow cytometry in peripheral blood 3 months post transplant in recipient animals competitively transplanted with equal volumes of peripheral blood from mice mobilized with G-CSF or G-CSF and Erlotinib (10 µg g^{-1}) in competition with competitor B6.CD45.1 BM. *$p<0.05$ versus G-CSF. Results are presented as mean + 1 SEM.

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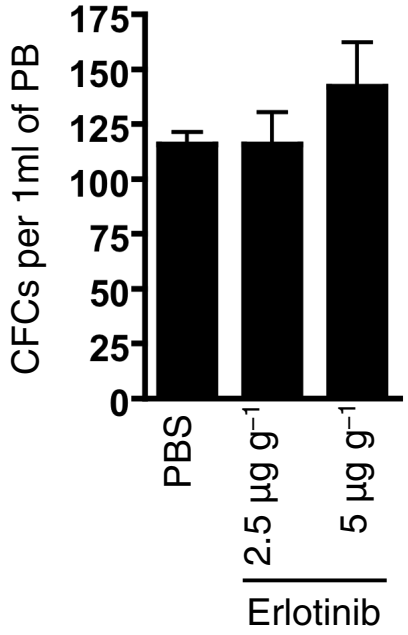
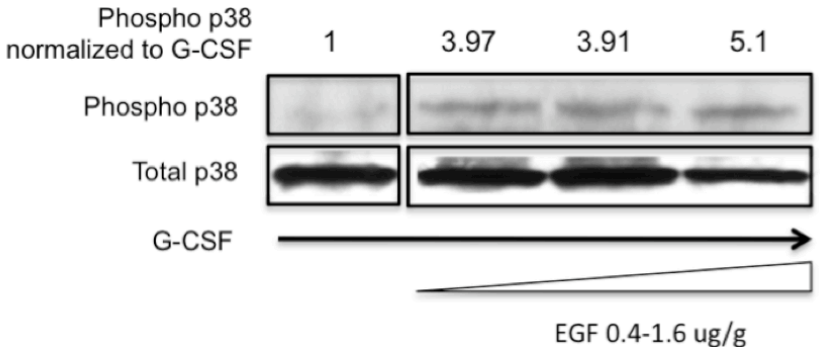
Supplemental Figure 3



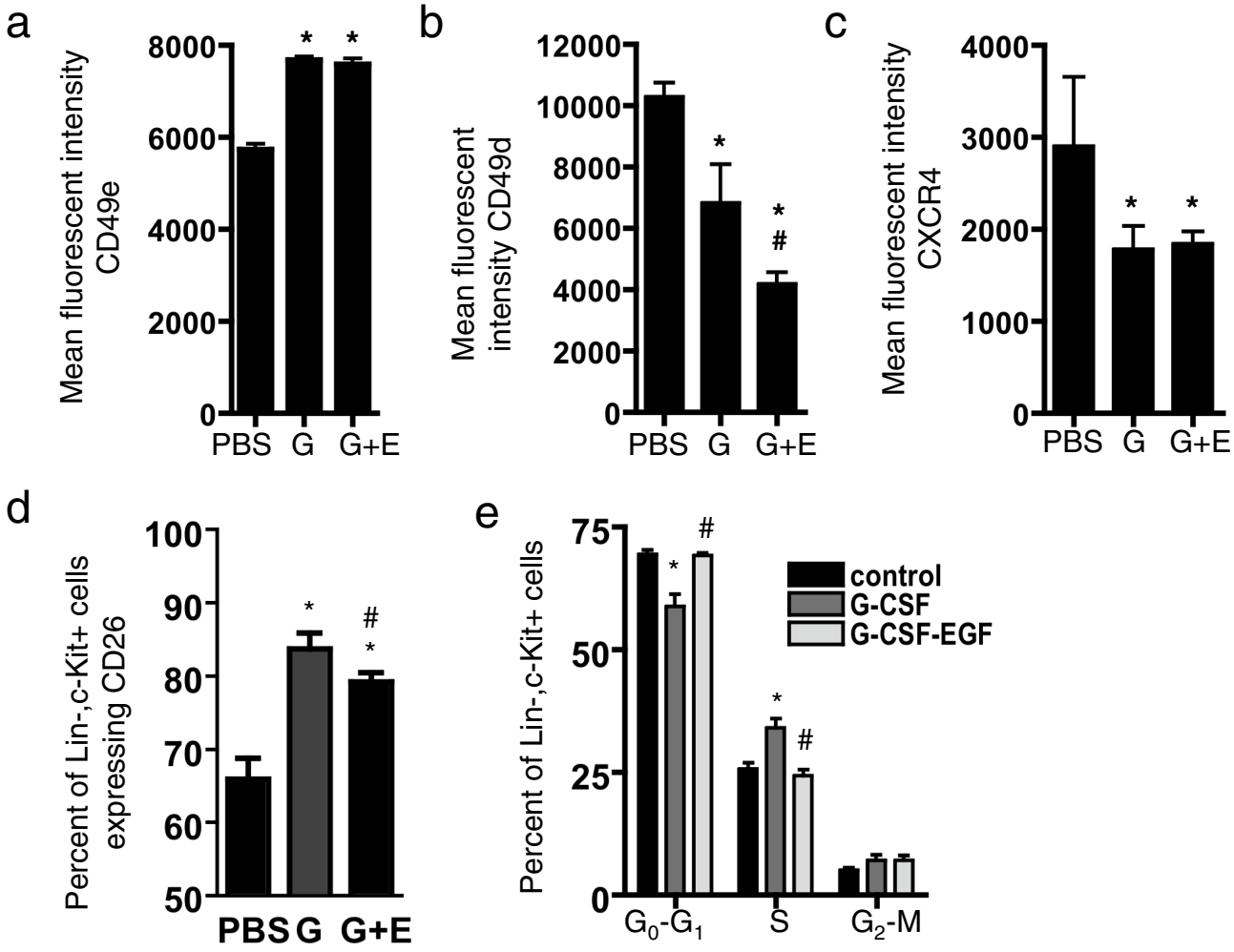
Supplemental Figure 3.**Effect of Erlotinib treatment on progenitor cell mobilization.** Progenitor mobilization in C57BL/6 mice in response to 3 days of Erlotinib treatment (2.5 and 5 µg g^{-1}) in the absence of G-CSF. n= 3. Results are presented as mean + 1 SEM.

Supplemental figure 4



Supplemental Figure 4**. p38 expression is increased in response to EGF.** Activation of p38MAPK upon EGF treatment in low density bone marrow cells from bone marrow of animals undergoing G-CSF induced mobilization (100mg kg^{-1}) determined by Western Blot (representative blot of 2 independent experiments).

Supplemental Figure 5



Supplemental Figure 5. **Erlotinib alters multiple parameters in G-CSF mobilized, bone marrow resident HSPCs**. Flow cytometric determination of the level of expression of (a) CD49e, (b) CD49d, (c) CXCR4 and (d) CD26 on Lin-,c-Kit+ progenitor cells in bone marrow in animals treated with PBS or with G-CSF or G-CSF + EGF (0.8 μg g^{-1}). (e) Flow cytometric determination of the percentage of Lin-, c-Kit+ progenitor cells in bone marrow in distinct stages of the cell cycle upon PBS, G-CSF or G-CSF and EGF (0.8 μg g^{-1}) treatment. n=4, data is presented as mean + 1 SEM. * $p<0.05$ with respect to PBS. # $p<0.05$ with respect to G-CSF-EFG compared to G-CSF alone.

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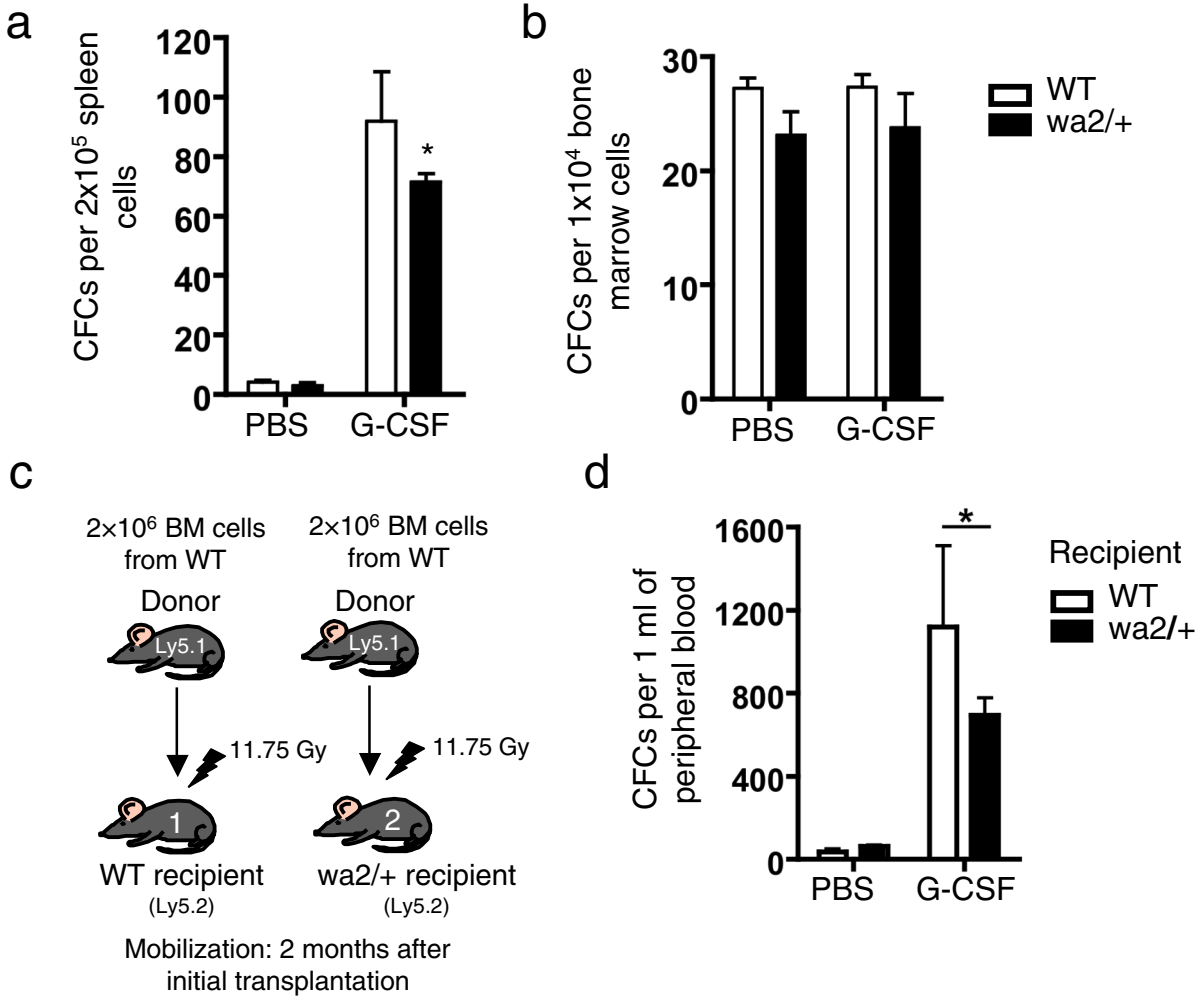
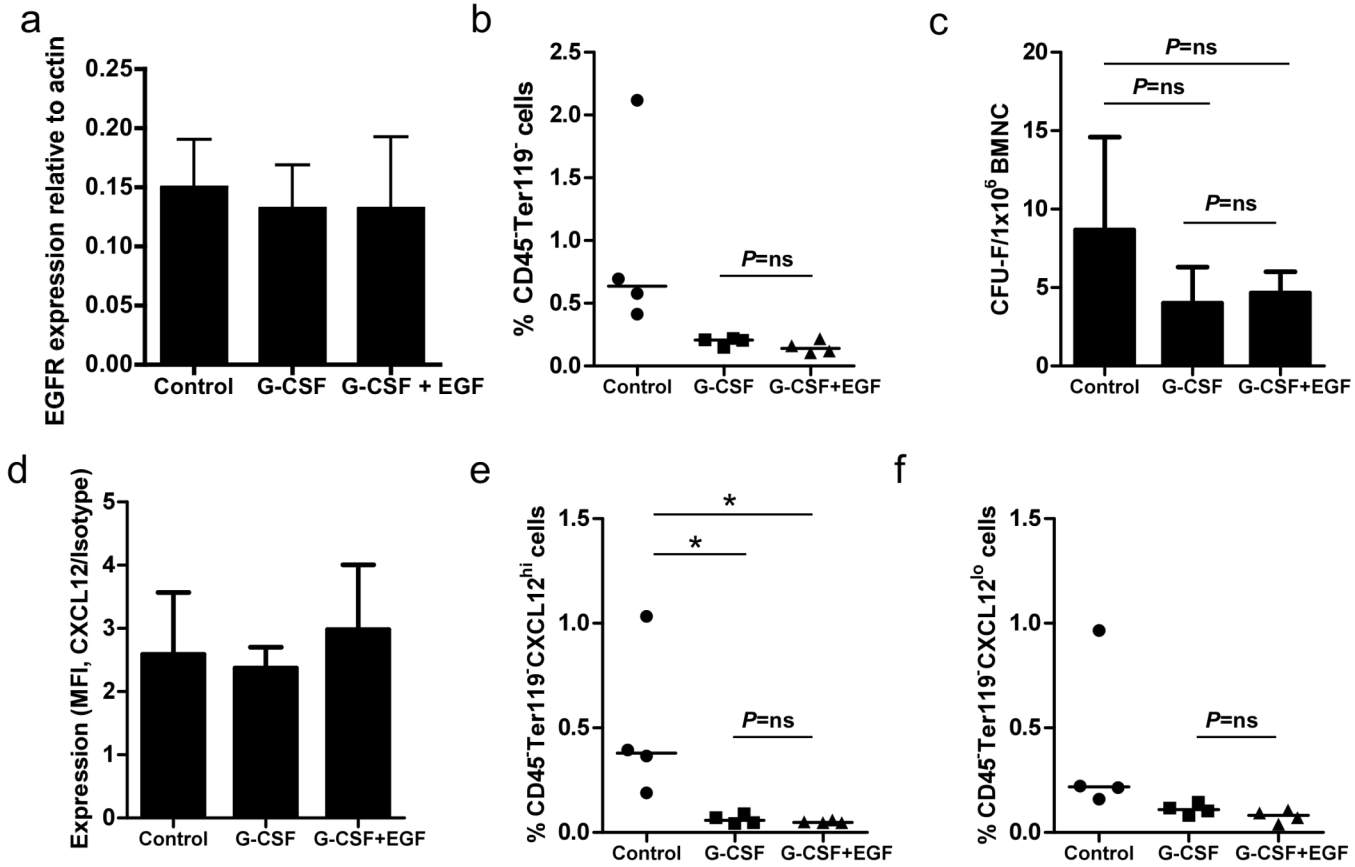
Supplemental Figure 6



Supplemental Figure 6. **Mobilization efficiency is reduced in wa2/+ stroma**. CFC frequency in (a) spleen and (b) bone marrow upon G-CSF induced mobilization in wt and wa2/+ animals. (c) Experimental setup to determine mobilization of WT cells in wa2/+ stroma. (d) CFC mobilization in response to PBS and G-CSF. n=at least 4 per group, results are expressed as mean + 1 SEM. The data suggest that constitutively reduced EGFR signaling in wa2/+ animals in the niche/the system during differentiation alters the niche resulting in reduced mobilization, a mechanism distinct from the short-term pharmacological inhibition of EGFR signaling in HPCs enhancing G-CSF induced mobilization (**Fig 3f,g,h**). Results (n=at least 3) are expressed as mean + 1 SEM.*= $p<0.05$.

Supplemental Figure 7



Supplemental Figure 7**. Inhibition of G-CSF induced mobilization by EGF does not result in altered parameters in stroma cells**. (a) Expression of the EGFR relative to actin in $CD45^-/Ter119^-$ stroma cells (b) G-CSF administration for 5 days induced a decrease in the frequency of non-hematopoietic $CD45^-/Ter119^-$ BM cells and (c) mesenchymal-type progenitors (CFU-F) most likely due to a myeloid expansion-mediated dilution effect. Addition of EGF (0.8 µg g^{-1}) to the G-CSF administration scheme did not change the frequency of non-hematopoietic bone marrow cells or mesenchymal progenitors**.** (d) Overall level of CXCL12 expression and (e) frequency of CXCL12 high-expressing non-hematopoietic bone marrow cells enriched in CFU-F and (f) frequency of CXCL12-dim non-hematopoietic bone marrow cells enriched in mature osteoblasts and other stromal cells**.** EGF did not alter the expression levels of $alpha_4beta_1$-integrin, $alpha_5beta_1$-integrin, CD44 or VCAM-1 on non-hematopoietic bone marrow cells during G-CSF induced mobilization (data not shown). These data suggest that inhibition of G-CSF-induced mobilization by EGF does not alter parameters in a non-hematopoietic bone marrow cell population reported to be critical for G-CSF-induced mobilization. n= 4. Data are presented as mean (+1 SEM in bar diagrams).

Supplemental Table 1

Interval Analyst : Chr 11 from 14.760000 to 19.710000 Mb customize

	Gene Symbol	Mb Start (mm8)	Gene Length (Kb)	SNP Count	SNP Density (SNP/Kb)	Avg. Expr. Value	Human Chr	Mb Start (hg17)	Gene Description
1	BC027127	16.157774	169.539	7	0.041288				Novel transcript.
2	Sec61g	16.401641	6.513	1	0.153539		7	54.594149	Protein transport protein ...
3	Egfr	16.652205	161.705	3	0.018552		7	54.860933	epidermal growth factor re...
4	A630050E13Rik	16.851412	3.363	13	3.865596				hypothetical protein LOC31...
5	Plek	16.871452	80.932	65	0.803143		2	68.504074	Pleckstrin (Fragment).
6	1500041B16Rik	16.951936	27.439	70	2.551113				hypothetical protein LOC38...
7	Ppp3r1	17.059300	41.083	17	0.413796		2	68.317639	Adult male testis cDNA, RI...
8	1810003N24Rik	17.103204	8.352	5	0.598659				putatative 28 kDa protein
9	AI553587	17.111920	21.879	5	0.228530				hypothetical protein LOC10...
10	C1d	17.157620	11.559	4	0.346051		2	68.180987	nuclear DNA-binding protei...
11	5730466H23Rik	17.839896	13.955	31	2.221426				Adult male diencephalon cD...
12	Meis1	18.780432	138.532	297	2.143909		2	66.574182	16 days embryo kidney cDNA...

Supplemental Table 1. **Transcripts found in the 5 Mbp interval.** Transcripts found in the interval on chromosome 11 ranging from 14.76 to 19.71 Mbp. Data derived from the Genenetwork (www. Genenetwork.org), accessed 7-07.

Supplemental Table 2

Table S2. Expression of EGFR		
	EGFR/actin	SEM
Hematopoietic progenitor cells	0.023	0.002
Lung	34.287	1.547
Brain	48.432	4.937
Liver	1713.590	61.413

Supplemental Table 2. **Expression of EGFR in hematopoietic progenitor cells**. Real time quantitative PCR was performed on hematopoietic progenitor cells (Lin-, ckit+) and expression was compared to known EGFR expressing tissues. Results (n=3) are expressed as mean ± SEM.